ARCHITECTURE AND THE LOGIC OF PRODUCTIVITY. THREE PUBLIC HOUSING PROJECTS BY GROUPE STRUCTURES IN BRUSSELS (1950-1965).

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Despite our taste for geniuses and landmarks, the built environment of the post-war world is principally shaped by unidentified architectural offices that produce buildings rather than discourse. Groupe Structures is a typical example of such a firm.[1] The largest architectural firm in Belgium at the end of the 1960s, it realized an impressive array of public housing schemes, schools, offices, luxury hotels and holiday resorts. Groupe Structures was formed in 1949 by four graduates of the Institut Supérieur d'Urbanisme in Brussels, directed by the French conservative urban theoretician Gaston Bardet.[2] A typical exponent of the 'culturalist' tradition, Bardet rejected CIAM's functionalist and universalistic aspirations as in his eyes, it had transformed urbanism into an elitist and abstract 'planology'. In his view, the city's material and formal dimensions were subordinate to its fundamental role as a harmonious environment for human interaction. Rejecting urban concentration, Bardet pleaded for an

[1] Groupe Structures was founded by Raymond Stenier (°1921), Louis Van Hove (°1920), Jacques Boseret-Mali (1917-2003) and Jacques Vandermeeren (1920-2004). Except for the latter, all the partners were trained as an architect at the Sint-Lucas school of architecture in Schaarbeek (Brussels) before pursuing their formation at the Institut Supérieur d'Urbanisme. Although Groupe Structures' portfolio ranges from religious buildings to shopping centers, it is mostly associated with the 'Manhattan plan' for the North Quarter in Brussels (1969). Commissioned by the City of Brussels to transform the northern part of town into a modern business district, the planning proposal necessitated the massive expropriation of the original inhabitants. After a swift departure, the project stagnated due to the petroleum crisis in 1973, leaving behind a vast urban void. The 'Manhattan plan' thus became a nationwide symbol for the devastating effects of ruthless capitalism in the city. In this rhetoric, Groupe Structures came to embody the unscrupulous architect in the service of the financial and political establishment – an image that persists till today. After a prosperous career in the service of the political and financial establishment in Brussels, Groupe Structures suffered badly from the economic crisis in the 1970s. After the original partners' retirement in the early 1980s, the office was rebaptized 'Structures' but gradually lost its impetus. In 2005, some designers of the youngest generation decided to start afresh under the name 'GS3'.

This paper results from the first systematic study of Groupe Structures' work, undertaken by the author. As no central archive has been kept by the original partners, most of the information has been found in the archives of the public administrations and housing companies involved, as well as in secondary sources such as contemporary architectural magazines. I am greatly indebted to Louis Van Hove, founding partner of Groupe Structures, and Jeanine Robyns, his lifelong secretary, for giving me insight in the history and the way of working at the office in its early days. I am also grateful to Christine Boseret-Mali for sharing with me the personal archives left by her late father.

[2] Gaston Bardet (1907-1989) founded the Institut Supérieur d'Urbanisme Appliqué (ISUA) in Brussels in 1947, and taught there until 1974. A prolific theoretician, writer and lecturer, he had little chance to put his ideas into practice however. His most significant project is the garden city of Le Rheu in Brittanny (France). His vision on urbanism is best exposed in BARDET, Gaston - *Le Nouvel Urbanisme*. Paris: Fréal, 1948. For an introduction to Bardet's work and ideas, see FREY, Jean Pierre - "Gaston Bardet, théoricien de l'urbanisme culturaliste". *Urbanisme*. 7 (2001) 32-36 and COHEN, Jean-Louis - "Le nouvel urbanisme de Gaston Bardet". *Le Visiteur*. 2 (1996) 134-145.

equal distribution of people and industry over the territory by means of a chain of smaller communities in the countryside.

Groupe Structures integrated Bardet's ideas in a couple of early projects for the Société Nationale de la Petite Propriété Terrienne (PPT), such as the Nieuwenbos estate in Grand-Bigard, nearby Brussels (1953). Founded during the economic crisis of the 1930s, the PPT realized small settlements in the countryside as a means to modernize the countryside and absorb the overflow of unemployed labourers in the cities. Typically, Nieuwenbos consisted of semi-detached houses in a neo-traditional style on a large plot of land. In accordance with Bardet's theory of 'échelons communautaires', Nieuwenbos was conceived as a semi-autonomous village on the 'échelon domestique', featuring 6 different house types.[3] The design process itself was inspired by Bardet's principle of 'organisation polyphonique', a permutational system of work organization where each team member alternately coordinated either the entire (design) process, either collaborated on a specific part of the job.[4] A team member would for instance manage the 'échelon paroissial' in one part of the project while working on the 'échelon domestique' in another. In opposition to the monotony of many a modernist scheme, such a plurality of visions was supposed to engender a variety of spatial solutions within a single project.

In the PPT's magazine *Landeigendom*, Nieuwenbos was commented upon as follows:

> Nieuwenbos offers the families from Brussels sound housing, an open air cure, a useful usage of leisure time, and a wholesome and abundant diet. An ill-accommodated family that moves into a PPT property improves its standing and human dignity.[5]

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[3] As Bardet explains in *Le Nouvel Urbanisme* (pp. 214-226), the concept of 'échelons communautaires' consisted of a hierarchical set of spatial and social categories, ranging from the 'échelon patriarchale' (10 to 15 families) over the 'échelon domestique' (50 to 150 households) to the 'échelon paroissiale' (500 tot 1500 families. One of Groupe Structures' partners states in his account of the project that the different house types in Nieuwenbos were designed together with the future occupants. See BOSERET-MALI, Jacques – "Groot-Bijgaarden. De NMKL bouwt aan de poorten van Brussel". *Huisvesting* 6 (1952) 475-480. So far, we were unable to verify this statement. The plans of the different housing types are kept in the archives of the commune of Dilbeek.

[4] On this concept, see BARDET, Gaston - "L'organisation humaine est polyhonique". *Culture humaine*. 8 (1950) 339-348 and BARDET, Gaston - "La dernière chance: l'organisation polyphonique". *Connaître*. 3 (1950) 5-9.

[5] Comments on the verso of the cover of *Landeigendom* 1 (1957). Original quotation in Dutch: "[Nieuwenbos] biedt aan de Brusselse gezinnen gezonde huisvesting, een openluchtkuur, nuttig gebruik van de vrije tijd, gezonde en overvloedige voeding. Elk slecht wonend gezin dat in een kleine landeigendom komt, verhoogt zijn standing en zijn menselijke waardigheid" A similar comment appeared in the periodical *La*

The anti-urban undertones in this comment reveal the polarized ideological debate about (public) housing in Belgium during the early 1950s. Whereas the socialist wing favoured state-controlled and collective housing in urban agglomerations, the ruling Christian-democrats encouraged private home ownership outside the major cities. Estates like Nieuwenbos were considered as an antidote to the alienating effects of the industrial city, as it was believed that its rural character would stimulate family values and enhance the moral strength of its inhabitants. As can be derived from the lay-out of the houses and their modern equipment however (e.g. hot running water in the bathroom), Nieuwenbos was designed for an urban rather than a rural population. Indeed, the first PPT settlement to be located so close to a major agglomeration, it had less to do with modernizing the countryside or absorbing the overflow of labourers than with offering a suburban alternative to the lower middle classes in the Belgian capital.

Soon however, the garden city paradigm for public housing came under pressure as the value of land around Brussels increased dramatically. The steeply increasing cost of labour was a major issue however, since most contractors still worked along traditional, labour-intensive methods.[6] Consequently, the building industry appeared as an anachronism in an era of automation and scientific progress. As a remedy, the Belgian Service for the Increase of Productivity (BDOP) was created to propagate more efficient methods of production and distribution. One of its activities consisted in organizing trips to the USA to study its economical performance.[7] In the summer of 1954, Groupe Structures took part in such a mission with a particular focus on the problems of mass housing.[8] In its report, the delegation

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Maison: “entre la vie en appartement dans une tour-building de quinze étages située en bordure de la ville et la vie dans une PPT de 8 ares, les 91 familles du premier quartier de Grand-Bigard n’ont eu aucune hésitation. La ville n’est pas faite pour l’enfant”. Source: “350 PPT à Grand-Bigard et à Dilbeek”. *La Maison.* 8 (1956) 241.

[6] See on this matter “De NMKL en de evolutie van de bouwmethodes”. *Landeigendom* 8 (1968) 302 and DEJONGH, Guy; VAN WINDEKENS, Peter - *Van Kleine Landeigendom tot Vlaamse Landmaatschappij.* Brussels: VLM, 2001.

[7] On the notion of productivity in the Belgian context in general, and the Belgian Service for the Increase of Productivity in particular, see BERTRAMS, Kenneth - "Productivité économique et paix sociale au sein du plan Marshall. Les limites de l'influence américaine auprès des industriels et syndicats belges, 1948-1960". *Cahiers d'Histoire du Temps Présent*. 9 (2001) 191-235.

[8] The mission left on 14/07/1954 for an 8-week tour of the USA, mainly through the North-East (Chicago, New York, Washington), where it studied different aspects of the construction industry: its role in the general economic climate, the mechanisms of its financing, the design methods, the methods of execution and site organization, the technical equipment (central heating, air conditioning, and sanitary installations), the corporate bodies and, finally, issues of American urbanism (especially the problem of suburban housing). The delegation also met with an extensive range of officials, design professionals (meetings were held for instance with partners of SOM’s New York and Chicago office) and academics from MIT, Harvard and IIT. The findings of the

stated that the USA's success had perhaps less to do with technical superiority than with its stimulating entrepreneurial climate. Based on a close collaboration between architects, engineers and contractors, and characterized by a spirit of permanent innovation, the design and construction of buildings was guided by the rule of the three 'S': simplification, standardisation and specialisation. Especially the Hollin Hills housing estate in Alexandria (Virginia) by Charles Goodman seems to have made a lasting impression.[9] In opposition to the Belgian idea of the house as a long term investment and status symbol, it offered a clear instance of the home as a product of mass consumption. Built with industrial building materials and prefabricated building parts, every aspect of the project was geared towards a maximum reduction of work on site and an optimal return on investment. Yet, despite their austere conception, the houses at Hollin Hills were distinctly modern and comfortable.

Soon after, Groupe Structures implemented the lesson from America in a bungalow prototype that featured a number of novelties such as prefabricated load-bearing window frames, pre-assembled wooden roof trusses, insulating concrete blocks for the exterior walls and plaster board partitions in the interior.[10] Laid out on one floor and divided in a 'day zone' without partitions and a 'night zone' clustered around the bathroom, it came with a fully equipped kitchen, washing machine, central heating and built-in cupboards. Widely published as the embodiment of the shift from traditional craft to industrialized montage, the prototype provided the blueprint for the Ban Eik housing estate, Groupe Structures' most important public housing project.

Located in Wezembeek-Oppem, nearby Brussels, Ban Eik was a model project: relying on the latest innovations in building technology, it was to offer a wide variety of affordable homes and thus accommodate a harmonious 'social mix'. The houses were grouped in rows from 3 to 7 around intimate 'greens' and plugged onto a network of pedestrian routes; car access was only allowed on the backside via dead end streets. Just like in Hollin Hills, the estate featured

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mission were published as *Verslag van de zending Constructie van Gebouwen* [Report of the Mission 'Building Construction']. Brussels: Belgische Dienst Productiviteit, 1957.

[9] On Hollin Hills, see "Bungalow, Hollin Hills, Virginia; Architects: Charles M. Goodman Associates". *House & Home.* 1 (1954) 140-143 and AMENDOLA GUTOWSKI, Gabriela - Hollin Hills, *The Future that is now the Past: Challenges of Preserving a Post-War Suburban Community.* Unpublished master thesis in Historic Preservation, University of Pennsylvania, 2007. Accessed through http://repository.upenn.edu/hp_theses/78 on 20/04/2010.

[10] The prototype seems to have inspired by the 'Cadet' type, a prefabricated bungalow developed by Charles Goodman (the architect of Hollin Hills) for the National Homes Corporation. See the floor plan in *Verslag van de Zending*, 144. Groupe Structures' bungalow was published in *La Maison*, 8 (1956) 246-247; *La Maison* 4 (1957) 118-119; *Bouwen en Wonen* 5 (1957) 174-175 and *Landeigendom* 10 (1957) 375.

a limited set of house types, all sharing the same window frames, roof trusses and exterior finishings. To avoid monotony, polychromy was used to liven up the façades, while the estate's landscaping gave the ensemble an informal touch. The idea of building a prototype of each house on site was also imported from America. It provided a hands-on training for the contractor and a full scale catalogue for the future occupants. To meet the requested occupation density, two 10-story apartment blocks were placed in the centre of the estate however, totalling 180 flats of 4 different types.[11] The construction of these two buildings was one of the first applications of on site prefabrication in Belgium, as all structural components were cast in situ and fully equipped before being put into place.

From the start, Ban Eik attracted much attention. Put on display at the Brussels World Fair in 1958, it was awarded with the First Prize of the National Housing Institute and extensively documented in its periodical *Wonen*.[12] Despite their high standards, the houses were 10% cheaper than average, a surplus that enabled the financing of communal services such as central heating, a primary school and a nursery. Judging from contemporary photographs, the ideal of a harmonious social environment also seems to have been met. As an experiment in standardized and prefabricated building, Ban Eik was less successful however. Since funding for the second phase could not be secured in time, much of the advantage of prefabrication was lost. Its true asset – economy through continuity and repetition – was only fully played out in the two apartment blocks. As it appeared that the uninterrupted use of the moulds would result in a 4% economy, it was decided to start the construction of the second one right away rather than in a later stage. Finally, it is questionable to what extent Ban Eik offered a sustainable solution for public housing on the border of a large agglomeration. In its sophisticated attempt to reconcile city and countryside, collectivity and individuality, and tradition and innovation, it in fact revealed how the dream of Arcadian living in the periphery had become untenable.

[11] Although presented as such in the contemporary press coverage, the 'mixed development' concept, combining low and high rise in one single scheme, was not really a novelty. Apart from well known examples such as Ackroydon and Roehampton in the UK, the concept had also been experimented with in Belgium, notably in the Oud Oefenplein estate in Mechelen (arch. Jos Chabot, 1950), and the Cassablanca estate in Leuven (arch. Léon Stynen, 1956).

[12] Ban Eik was presented as a model in the Pavilion of Public Housing and Health (images in *Wonen.* 12 (1958) 20). On Ban Eik, see *Architecture* 33 (1960); *La Maison* 8 (1960) 261-265; *Wonen* 3 (1960) 433-443; 442-447; *Wonen* 26-27 (1964) 2-41.

The presence of two apartment blocks in Ban Eik is emblematic for the breakthrough of the high-rise scheme in the public housing sector in Belgium. The Rempart des Moines estate in the centre of Brussels, designed by Groupe Structures in 1962, is one of the clearest examples of this new paradigm.[13] In the attempt to maximize the return on investment, the logic of productivity reached its peak here. The estate's master plan resulted for instance from an almost mathematical equation between the allowed occupation density, maximum building height and optimum exposure. The same goes for the 320 apartments: distributed over five identical 10-story blocks, the idea of a 'social mix' was reduced here to the most economical distribution of the four types of apartments around a single elevator cage. Despite the project's industrialized conception, the winning tender was submitted by a contractor who realized the project with conventional techniques.[14] The Rempart des Moines project not only failed in terms of technical innovation however, it was also an urbanistic failure. As the site was almost fully occupied by the five apartment blocks, the central heating plant and the car park, only a few residual spaces were left for the inhabitants to appropriate. Typically for the technocratic spirit of the time, in response to the occupants' feelings of alienation and nostalgia, the public housing company proposed to name the apartment blocks after the streets that had been erased for their construction...[15] With retrospect, it is safe to say that rather than stimulating its revitalization, the Rempart des Moines estate contributed to the further decline of its neighbourhood. Paradoxically, Groupe Structures' partners thus created a living environment that bore all the destructive characteristics of the kind of urbanism their mentor Gaston Bardet had fiercely tried to steer them away from hardly 15 years earlier.

Concluding remarks

In the after war period, public housing became a crucial instrument in the democratic distribution of wealth. However, as has been shown, this ambition could only be realized by subjecting it to the same logic of productivity as the other economical sectors. The fundamental question thus became: how can we build more, faster and cheaper? Determined by economical constraints rather than humanist aspirations, such a context demanded a

[13] The construction of the Rempart des Moines estate was the largest in a series of projects undertaken by the Foyer Bruxellois (the Brussels public housing company) in the framework of the 'lutte contre les taudis' ['battle against the slums'] in the first half of the 1960s. Other projects were realized at the rue des Potiers (90 flats, also designed by Groupe Structures), the rue Haute (designed by Charles Van Nueten) and the rue des Brigitines (150 flats, designed by Gaston Brunfaut). See on this aspect *3000 Foyers Bruxellois.* Brussels: La Fonderie, 1997, 49-56.

[14] As communicated to the author by Louis Van Hove, founding partner of Groupe Structures, Brussels, 14/01/2010.

[15] This anecdote is related in *3000 Foyers Bruxellois*, 51-52.

pragmatic attitude towards architecture. Thus, rather than asking why a dwelling should be as cheap as possible, Groupe Structures tried to model the home to the laws of mass production. In doing so, it substituted the notion of architecture as the product of artistic creativity and individual expression for a well-planned, collaborative effort based on economical reasoning and industrial planning. Its capacity to act as a reliable and obliging partner would provide the clue to Groupe Structures' success in the 1960s, when it became the preferred designer for corporate clients, political institutions and religious authorities in Brussels.[16]

Nevertheless, as can be derived from the projects discussed above, the experimentations with standardization and prefabrication did not live up to their promises. As the Belgian government stimulated the building of individual homes rather than public housing, the latter only accounts for a small percentage of the housing stock of the post-war period. Consequently, the public housing sector was never capable of putting sufficient pressure on the construction industry to boost its performance level.[17] On the contrary, the sector suffered badly from the increasing building cost, resulting in an inverse correlation between the ever growing need for low-cost dwellings and the quality of their design and construction. In this respect, Groupe Structures' public housing projects embody the tension between the Welfare State ideal of equal distribution of wealth and the seemingly unavoidable matter-of-factness of its material implementation.

Illustrations: captions

Fig. 1: Groupe Structures, *Nieuwenbos public housing estate (1953-1955)*, contemporary photograph. Source: *Landeigendom* 1 (1957)

Fig. 2: Groupe Structures, *Bungalow prototype (1957)*, contemporary photograph. Source: *Bouwen en Wonen* 4/5 (1957) 175.

Fig. 3: Groupe Structures, *Ban Eik public housing estate (1957-1960)*, model as shown at the 1958 World Fair. Source: *Architecture* 33 (1960) 443.

Fig. 4: Groupe Structures, *Rempart des Moines public housing estate (1962-1965)*, model of scheme as realized. Source: Foyer Bruxellois Archives, Brussels. Used with permission.

[16] In the 1960s, Groupe Structures continued its research into prefabrication in the Berlaymont monastery and school complex in Waterloo, designed and realized in less than a year's time (1962). The group's most impressive achievement in this respect is the design and construction of the vast NATO headquarters in Evere (nearby Brussels) in barely nine months time (1966). Still in the 1960s, Groupe Structures also realized the Philips Building, the Monnaie Centre and the Sheraton Hotel – all in the centre of Brussels.

[17] The research and discourse on prefabrication and standardisation in Belgium during the after war period is currently being investigated by Stephanie Vandevoorde as part of her doctoral research at the University of Ghent. I wish to thank her for gratefully sharing with me her findings on this topic.

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Figure 1

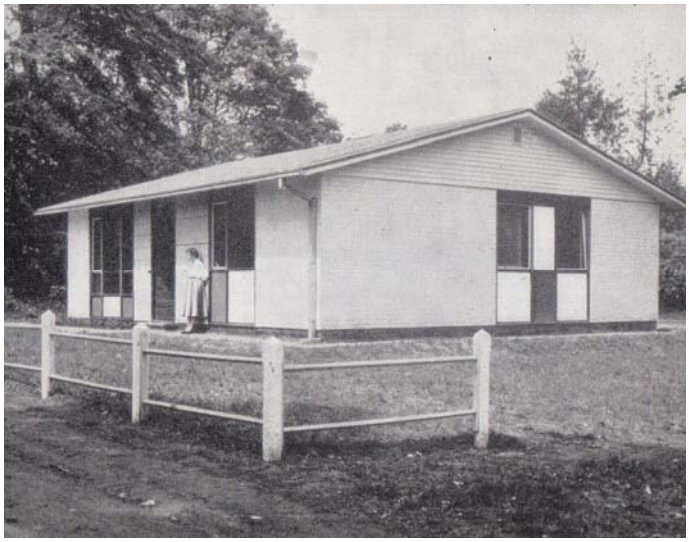

Figure 2

Figure 3

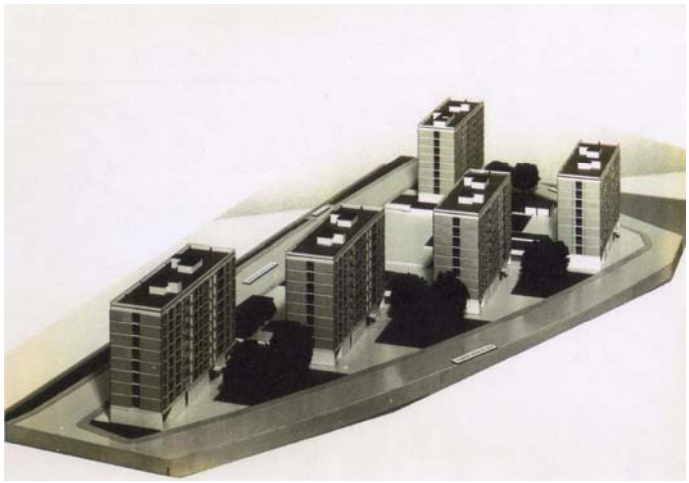

Figure 4